



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-0592; Project Identifier AD-2020-00251-E]

RIN 2120-AA64

Airworthiness Directives; General Electric Company Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for all General Electric Company (GE) GEnx-1B64/P2, GEnx-1B67/P2, GEnx-1B70/75/P2, GEnx-1B70/P2, GEnx-1B70C/P2, GEnx-1B74/75/P2, GEnx-1B76/P2, GEnx-1B76A/P2, and GEnx-2B67/P model turbofan engines with a certain a high-pressure turbine (HPT) rotor stage 2 disk installed. This proposed AD was prompted by a report of the potential for undetected subsurface anomalies formed during the manufacturing process that could result in uncontained failure of the HPT rotor stage 2 disk. This proposed AD would require an immersion ultrasonic inspection (USI) of the HPT rotor stage 2 disk and, depending on the results of the inspection, replacement of the HPT rotor stage 2 disk with a part eligible for installation. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact General Electric Company, GE Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215; phone: 513-552-3272; email: aviation.fleetsupport@ge.com. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759.

Examining the AD Docket

You may examine the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0592; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, any comments received, and other information. The street address for Docket Operations is listed above. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Mehdi Lamnyi, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7743; fax: 781-238-7199; email: Mehdi.Lamnyi@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2020-0592; Project Identifier AD-2020-00251-E” at the

beginning of your comments. The FAA specifically invites comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. The FAA will consider all comments received by the closing date and may amend this NPRM because of those comments.

Except for Confidential Business Information as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The FAA will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

Confidential Business Information (CBI) is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Mehdi Lamnyi, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Discussion

The FAA received a report of the potential for undetected subsurface anomalies formed during the manufacturing process that could result in uncontained failure of the

HPT rotor stage 2 disk. During an investigation by GE into melt-related material anomalies, a subsurface anomaly was found in an early production HPT rotor stage 2 disk. This type of subsurface anomaly has the potential to cause the failure of the HPT rotor stage 2 disk. In response, GE published service information that introduces inspections to prevent failure of the HPT rotor stage 2 disk. This condition, if not addressed, could result in uncontained HPT rotor stage 2 disk release, damage to the engine, and damage to the airplane.

Related Service Information under 1 CFR part 51

The FAA reviewed GE GENx-1B Service Bulletin (SB) 72-0463 R01, dated January 6, 2020, and GE GENx-2B SB 72-0402 R01, dated January 8, 2020. The service information describes procedures for performing an immersion USI of the affected HPT rotor stage 2 disks on GENx-1B and GENx-2B model turbofan engines. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA's Determination

The FAA is proposing this AD because the Agency evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require an immersion USI of the HPT rotor stage 2 disk and, depending on the results of the inspection, replacement of the HPT rotor stage 2 disk with a part eligible for installation.

Costs of Compliance

The FAA estimates that this proposed AD affects 276 engines installed on airplanes of U.S. registry.

The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
USI of HPT rotor stage 2 disk	8 work-hours x \$85 per hour = \$680	\$0	\$680	\$187,680

The FAA estimates the following costs to do any necessary replacements that would be required based on the results of the proposed inspection. The FAA has no way of determining the number of aircraft that might need this replacement:

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Remove and replace the HPT rotor stage 2 disk	2 work-hours x \$85 per hour = \$170	\$458,900	\$459,070

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

General Electric Company: Docket No. FAA-2020-0592; Project Identifier AD-2020-00251-E.

(a) Comments Due Date

The FAA must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

(b) Affected ADs

None.

(c) Applicability

(1) This AD applies to all General Electric Company (GE) GEnx-1B64/P2, GEnx-1B67/P2, GEnx-1B70/75/P2, GEnx-1B70/P2, GEnx-1B70C/P2, GEnx-1B74/75/P2, GEnx-1B76/P2, and GEnx-1B76A/P2 model turbofan engines that have a high-pressure turbine (HPT) rotor stage 2 disk, part number (P/N) 2383M86P02, and a serial number (S/N) listed in paragraph 4, Appendix - A, Table 1, Table 2, or Table 3, of GE GEnx-1B Service Bulletin (SB) 72-0463 R01, dated January 6, 2020, installed.

(2) This AD applies to all GE GEnx-2B67/P model turbofan engines that have a HPT rotor stage 2 disk, P/N 2383M86P02, and a S/N listed in paragraph 4, Appendix - A, Table 1, Table 2, or Table 3, of GE GEnx-2B SB 72-0402 R01, dated January 8, 2020, installed.

(d) Subject

Joint Aircraft System Component (JASC) Code 7250, Turbine Section.

(e) Unsafe Condition

This AD was prompted by a report of the potential for undetected subsurface anomalies formed during the manufacturing process that could result in uncontained failure of the HPT rotor stage 2 disk. The FAA is issuing this AD to prevent failure of the HPT rotor stage 2 disk. The unsafe condition, if not addressed, could result in uncontained HPT rotor stage 2 disk release, damage to the engine, and damage to the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) For affected GE GEnx-1B engines, at the next engine shop visit after the effective date of this AD, or before the HPT rotor stage 2 disk has accumulated 6,500 cycles since new (CSN), whichever occurs first, perform an immersion ultrasonic inspection (USI) of the HPT rotor stage 2 disk using paragraph 3.B.(1) of GE GEnx-1B SB 72-0463 R01, dated January 6, 2020.

(2) If, during the USI required by paragraph (g)(1) of this AD, a rejectable indication is found, before further flight, remove the HPT rotor stage 2 disk from service and replace it with a part eligible for installation.

(3) For affected GE GEnx-2B engines, at the next engine shop visit after the effective date of this AD, or before the HPT rotor stage 2 disk has accumulated 6,500 CSN, whichever occurs first, perform an immersion USI of the HPT rotor stage 2 disk using paragraph 3.B.(1) of GE GEnx-2B SB 72-0402 R01, dated January 8, 2020.

(4) If, during the USI required by paragraph (g)(3) of this AD, a rejectable indication is found, before further flight, remove the HPT rotor stage 2 disk from service and replace it with a part eligible for installation.

(h) Definitions

(1) For the purpose of this AD, an engine shop visit is when a major engine flange is separated for purposes other than the removal of the fan for transportation.

(2) For the purposes of this AD, a “part eligible for installation” is:

(i) An HPT rotor stage 2 disk, which is not a S/N listed in paragraph 4, Appendix - A, Table 1, Table 2, or Table 3, of GE GEnx-1B SB 72-0463 R01, dated January 6, 2020, or GE GEnx-2B SB 72-0402 R01, dated January 8, 2020; or,

(ii) An HPT rotor stage 2 disk that has successfully passed the immersion USI required by paragraph (g)(1) or (3) of this AD, or passed the immersion USI using GE GEnx-1B SB 72-0463 R00, dated November 20, 2019, or GE GEnx-2B SB 72-0402 R00, dated November 20, 2019, before the effective date of this AD.

(i) Credit for Previous Actions

You may take credit for the immersion USI of the HPT rotor stage 2 disk required by paragraph (g)(1) or (3) of this AD if you performed the inspection before the effective date of this AD using GE GEnx-1B SB 72-0463 R00, dated November 20, 2019, or GE GEnx-2B SB 72-0402 R00, dated November 20, 2019.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (k)(1) of this AD. You may email your request to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(k) Related Information

(1) For more information about this AD, contact Mehdi Lamnyi, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7743; fax: 781-238-7199; email: Mehdi.Lamnyi@faa.gov.

(2) For service information identified in this AD, contact General Electric Company, GE Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215; phone: 513-552-3272; email: aviation.fleetsupport@ge.com. You may view this referenced

service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759.

Issued on June 8, 2020.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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